

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

LOVEPOP, INC.,

Plaintiff and Counterclaim
Defendant,

v.

PAPER POP CARDS INC.,

Defendant and Counterclaim
Plaintiff.

Civil Action No. 1:17-cv-11017-PBS

Memorandum in Support of LovePop's Motion to Exclude Testimony by Laurence Lieb

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Paper Pop has produced electronic documents in this case purporting to contain embedded data showing that the documents – and therefore Paper Pop’s cards – were created prior to LovePop’s cards. Indeed, Paper Pop attached screen shots showing the metadata associated with its computer aided design (“CAD”) files and photographs to its motion for summary judgment, as support for its claimed creation dates. Dkt. 91-10 to 91-19, 91-28 to 91-30. Paper Pop employed this strategy, however, without submitting expert testimony on what metadata is and whether it is reliable, what metadata is associated with Paper Pop’s files, and what that metadata means. Paper Pop apparently believes that it can introduce evidence of metadata to the factfinder without expert testimony, even when the authenticity of that metadata is in question.

LovePop took a different approach. It affirmatively designated an expert, James Berriman, to testify on issues related to metadata, and in particular on certain anomalies observed in Paper Pop’s evidence. After LovePop served Mr. Berriman’s report, Paper Pop offered Laurence Lieb as a rebuttal witness, but the scope of Mr. Lieb’s opinion was narrowly focused on his evaluation of the metadata of Paper Pop’s documents through forensic software, a process that, according to Mr. Leib, yielded no evidence of tampering. Mr. Lieb did not opine on the basic workings of metadata or whether and how it can be manipulated. Thus, any testimony by Mr. Lieb would be limited in scope and should only come in to the extent it rebuts Mr. Berriman.¹

¹ Because Paper Pop did not disclose Mr. Lieb by the deadline for “Initial expert reports on issues as to which party bears the burden of proof,” Dkt. 81, 82, Paper Pop is foreclosed from presenting any testimony from Mr. Lieb in support of issues that are not in direct rebuttal to Mr. Berriman, and if Paper Pop were to succeed in its efforts to exclude the testimony of Mr. Berriman, entirely or on any particular subject, Mr. Lieb should also be excluded to the same extent.

Yet even within the narrow confines of the issues on which Paper Pop may seek to use Mr. Lieb in rebuttal, his testimony is unreliable and lacks sufficient support, and should not be admitted under Federal Rule of Evidence 702. In reporting the metadata of Paper Pop's documents in this case, he claims to have found no evidence of tampering – which he incorrectly asserts cannot occur without leaving evidence – and he misreports metadata in several instances. Most problematically, Mr. Lieb equates an absence of evidence of tampering with proof that tampering did not occur. For these reasons and additional reasons discussed below, Mr. Lieb does not satisfy the reliability requirements of *Daubert* and should not be allowed to testify.

Federal Rule of Evidence 702 imposes a duty on the trial court to act as a gatekeeper for expert testimony, and to ensure that it is both reliable and relevant before admitting it. *Daubert v. Merrell Dow Pharms, Inc.*, 509 U.S. 579 (1993); *Ruiz-Troche v. Pepsi Cola of P. R. Bottling Co.*, 161 F.3d 77, 80 (1st Cir. 1998). While one or several errors in an expert's report or testimony typically goes to weight rather than admissibility, exclusion of testimony in its entirety can be appropriate where errors are so pervasive as to undermine the reliability of the expert's proffered opinion. *United States v. Candelario-Santana*, 916 F. Supp. 2d 191, 204, 205 (D.P.R. 2013) (excluding expert's testimony where it "contained considerable errors that suggest a certain carelessness and slipshod disregard for the seriousness of our present inquiry" and where expert "seemed unwilling or unable to explain evidence that tended to refute his conclusions"). The errors and contradictions in Mr. Lieb's testimony are so significant that they demonstrate that (a) he does not understand fundamental properties of metadata, and/or (b) he is willing to ignore or disclaim what he knows in order to reach his desired conclusions. In either case, his opinion is unreliable and should be excluded.

I. What Metadata Is: Mr. Lieb should not be permitted to testify that metadata is a reliable way to date electronic files.

Paper Pop seeks to rely at least in part on the metadata associated with its electronic files as evidence of the dates when those files were created and, by extension, when its cards were designed. However, Paper Pop made no effort to designate an expert to opine on metadata until LovePop presented an expert to explain that it is not reliable. Even then, Mr. Lieb's rebuttal expert report did not address how metadata is generated, how it may be manipulated, or what evidence manipulation would leave behind. When asked to confront these issues in deposition, Mr. Lieb at times admitted that Mr. Berriman was correct, and at other times demonstrated a fundamental lack of understanding of the subject at hand. Mr. Lieb should not be permitted to testify that metadata is a reliable method of dating files because (a) Paper Pop did not designate him as an affirmative expert witness to support admission of its metadata evidence; (b) he did not rebut Mr. Berriman on this subject in his report or in any meaningful way at his deposition; and (c) he appears not to be an expert on such matters, as demonstrated during his deposition.

Because Paper Pop did not disclose Mr. Lieb as an expert witness for issues on which Paper Pop bears the burden of proof, it cannot rely on Mr. Lieb's testimony to support the authenticity of its own documents' metadata or to establish a creation timeline as part of its affirmative case.²

² Indeed, the lack of expert testimony on metadata appears to preclude Paper Pop from relying on any metadata associated with its documents to establish when the documents were created. *See United States v. Wilkins*, 2016 U.S. Dist. LEXIS 59808, *12-14 (W.D. Mo. 2016) ("Any testimony regarding the metadata underlying digital images should in most cases be proffered by a qualified expert. . . . I conclude that expert testimony would be required before any of this evidence could be relied on by the court"); *see also United States v. Chavez*, 2018 U.S. Dist. LEXIS 157092, *30 (D.N.M. 2018) ("Defendant relies on . . . a sheet containing metadata that defense counsel's paralegal extracted from digital photographs Defendant did not present testimony, expert or otherwise, to establish the authenticity and reliability of the metadata, leading to conclusions that appear speculative and based on unsupported assumptions. As a result, the Court does not afford much weight to this evidence").

Moreover, even in his rebuttal report, Mr. Lieb did not critique Mr. Berriman's explanations regarding how metadata is generated, how it can be manipulated, and what traces manipulation would leave. His report does not address these subjects, and he initially testified that, if he had disagreed with something in Mr. Berriman's report, he would have stated as much in his rebuttal report. Lieb Dep., Dkt. 138-5, 52:23-53:20. Indeed, although he admitted in deposition that he did not bother to verify many of Mr. Berriman's assertions regarding metadata manipulability, in many cases, when pressed, he acknowledged that Mr. Berriman was correct. For example, when presented with screen shots demonstrating that the metadata of Paper Pop's street team photographs could be manipulated to show dates even earlier than the dates Paper Pop claims they were taken, Mr. Lieb had to concede that, as Mr. Berriman had explained, the dates could be easily changed.³ Lieb Dep., Dkt. 138-5, 152:13-21.

Finally, during the course of his deposition, Mr. Lieb demonstrated a fundamental lack of understanding of how metadata can be manipulated that disqualifies him as an expert on that subject. For example, Mr. Lieb claimed not to know whether it was possible, when forwarding an email, to change the content of earlier emails in the thread simply by placing one's cursor and typing; he claimed to be unfamiliar with the common practice of responding to emails with "in-line comments" added to an earlier email in the thread. Lieb Dep., Dkt. 138-5, 67:7-17, 62:19-23. More troublingly, although Mr. Lieb claimed that his analysis of the documents in this case definitively would have revealed evidence of tampering, if any tampering had occurred, Lieb Dep., Dkt. 138-5, 54:16-55:10, his supposed "test" of this assertion misses the mark entirely, and

³ Undersigned counsel had manipulated the Date Taken field of a photograph by typing in a new date (Lieb Dep., Dkt. 138-5, 147:20-24), and Date Created and Modified by using a backdated system clock (Lieb Dep., Dkt. 138-5, 148:12-149:22), but both experts agree that the date metadata for a photograph can also be manipulated simply by changing the date settings on the digital camera. Lieb Dep., Dkt. 138-5, 75:25-76:8; Berriman Supp. Report, Dkt. 138-4, paragraphs 162-163.

he ultimately admitted in deposition that documents whose metadata had been manipulated in the same manner that LovePop asserts occurred in this case showed no evidence of tampering. *See* Section III, *infra*. Mr. Lieb has shown that, while he can (in most instances) read reports generated by forensic software, he does not possess expertise on processes for manipulating metadata or what evidence those processes would create.

Thus, to the extent that Paper Pop seeks to rely on Mr. Lieb's testimony to support an inference that the metadata associated with electronic files is a reliable source of information about when those files were created,⁴ it should be precluded from doing so. Even setting aside Paper Pop's failure to offer Mr. Lieb as an affirmative expert, and Mr. Lieb's failure to address metadata manipulability in his rebuttal report, Mr. Lieb has demonstrated that he knows little about whether and how metadata can be manipulated and, when pressed, he agrees with Mr. Berriman that it can be.

II. What the Metadata Says: Mr. Lieb does not reliably report and should not be permitted to testify about the metadata of Paper Pop's documents.

Mr. Lieb claims time and time again to be an "independent" expert, whose role is to review metadata through a forensic tool, and then report the metadata he finds. *See, e.g.*, Lieb Dep., Dkt. 138-5, 7:5-11, 99:15-22, 100:1-6, 183:14-17, 189:19-190:2, 263:23-264:4. Mr. Lieb is no more "independent" than any expert in an adversary proceeding, and he does not follow the process he describes in any reliable fashion. He incorrectly reports what the metadata of the documents is and disregards metadata that is problematic for his client's position.

⁴ Notably, Mr. Lieb appears to consider the metadata associated with Paper Pop's documents to be reliable *except* in the one instance when it is unhelpful for Paper Pop. *See* Section II.B, *infra*.

A. Mr. Lieb's methodology is sloppy and unreliable.

Mr. Lieb did not undertake the diligent forensic analysis that he claimed. In his report, he offered incorrect data that he falsely claimed to have obtained through a forensic tool, he confused two types of metadata, and he incorrectly translated hexadecimal code despite using a tool that performed the translation automatically. Mr. Lieb uses automated software tools in his analysis, which may generally provide reliable results, but Mr. Lieb simply does not apply and report them accurately. Mr. Lieb also does not rebut Mr. Berriman regarding any piece of the metadata in this case. For all of these reasons, he should not be allowed to testify regarding what Paper Pop's metadata says.

1. Mr. Lieb reported false dates from an unreliable source.

One of the categories of documents that Mr. Lieb reviewed was a collection of photographs purportedly depicting street vendors selling Paper Pop's cards. He testified that he reviewed the metadata for those photographs in his preferred forensics software tool, OSForensics, identified the Date Taken that OSForensics revealed to him, and listed that date in his report. Lieb Dep., Dkt. 138-5, 76:11-13, 77:22-24, 81:17-21, 86:20-24. For the file IMG_5911, he identified the Date Taken as June 13, 2018. Lieb Report, Dkt. 138-2, paragraph 14.

Mr. Lieb attached screenshots showing the OSForensics-extracted metadata for these photographs as an exhibit to his report. The metadata associated with IMG_5911 is shown on the final page of that exhibit. The OSForensics report for IMG_5911 contains only nine pieces of information. None of them is a date. Dkt. 138-12. Confronted with this fact at deposition,

Mr. Lieb confirmed that IMG_5911 does not contain any date in its metadata.⁵ Lieb Dep., Dkt. 138-5, 88:4-18, 90:25-91:4.

So where did Mr. Lieb find a date to report? Paper Pop's counsel took and produced screenshots from their computers, showing each photograph open in photo viewing software, along with the "File Info" that the photo viewing software associated with it, some of which Paper Pop cited in its summary judgment papers. The screenshot for IMG_5911 showed a Date Taken of June 13, 2018. Dkt. 138-13. Confronted with this evidence at his deposition, Mr. Lieb admitted that June 13, 2018 was the date on which Paper Pop's counsel took the screenshot – not the date on which the photograph was taken. Lieb Dep., Dkt. 138-5, 93:21-94:2. The photo viewing software used that date by default because the file did not contain a date of its own. Lieb Dep., Dkt. 138-5, 93: 1-8. This arbitrary date, which has no significance whatsoever to the photograph, is the one that Mr. Lieb included in his report and incorrectly testified was extracted from the image file by OSForensics.

In his report and at his deposition, Mr. Lieb repeatedly derided the idea of drawing conclusions from the metadata that a normal computer user sees. See, e.g., Lieb Dep., Dkt. 138-5, 94:7-16; 95:7-11; 131:10-132:2. This would include, for instance, the "Properties" window opened by right-clicking on a file, or the "File Info" viewable within a software program like Microsoft Word or a photo viewer. Mr. Lieb asserted that relying on such information would be "a nonforensically sound method to test dates. . . . [I]t'd be really incredibly important to use actual forensic tools to extract and report on metadata dates." Lieb Dep., Dkt. 138-5, 131-15-18.

⁵ Indeed, Mr. Berriman's report should have tipped him off. Although Mr. Lieb reported a date for each photograph, Mr. Berriman correctly reported that some of the photographs "have no 'Date Taken' metadata at all." Berriman Report, Dkt. 138-1, paragraph 81.

Nevertheless, Mr. Lieb's forensic analysis of IMG_5911 consisted of relying on what he calls a "nonforensically sound" piece of metadata depicted in a screenshot that he did not take, ignoring what he considers to be a "really incredibly important" rule of forensic analysis, and then misrepresenting the source of the (incorrect) date. That is not a reliable methodology.

This is not a simple typographical error, or an accidental reporting of the wrong metadata field. In order to have made this error, Mr. Lieb must have disregarded what he views as a bedrock principle of forensic analysis. That he would do so, and not remember having done so (Lieb Dep., Dkt. 138-5, 88:22-89:7), calls into question his explanation of the process he undertook for every document in this case, and the results he reports.

2. Mr. Lieb confuses internal and external metadata.

Each electronic file has both "internal" (or embedded) and "external" (or file system) metadata. The internal metadata is embedded within the file itself, travels with the file, and should not change when the file is transferred from one location to another. Lieb Dep., Dkt. 138-5, 163:17-21, 164:19-25; Berriman Supp. Report, Dkt. 138-4, paragraph 102. The external metadata reflects what a computer on which the file exists knows about the file. Berriman Supp. Report, Dkt. 138-4, paragraph 101. When a file is transmitted to another device inside an "archive" or "container" file, its internal metadata is unaffected, and the archive includes a copy of some of the file's external metadata from the computer where the archive was created. Berriman Supp. Report, Dkt. 138-4, paragraphs 138-139. Paper Pop produced the Tian Gu catalogs as PDF files inside archives, so the catalog PDFs have both internal and external metadata available for review.

Mr. Lieb incorrectly asserts at Paragraph 23 of his rebuttal report that he and Mr. Berriman agree that the "embedded" (*i.e.*, internal) metadata of the catalog PDFs matches the

dates on the catalogs' covers. Dkt. 138-2. In fact, however, both experts' initial reports addressed the external, rather than internal metadata of these PDFs. Berriman Report, Dkt. 138-1, paragraph 79, as further explained at Berriman Supp. Report, Dkt. 138-4, paragraphs 147-151; Lieb Report, Dkt. 138-2, paragraph 11. Moreover, the internal metadata of the catalog PDFs does not, in fact, match the dates on the catalogs' covers, or their external metadata. Berriman Supp. Report, Dkt. 138-4, paragraph 152; Lieb Dep., Dkt. 138-5, 194:15-198:5, 204:11-16; 208:12-17. As discussed below, it appears that Mr. Lieb either did not review the documents' internal metadata or chose to ignore it, because it is unhelpful to his client's position. Lieb Dep., Dkt. 138-5, 222:12-22.

Mr. Lieb testified that his process in analyzing a document is to look at all of its metadata, internal and external, via OSForensics, and to report what he finds. Lieb Dep., Dkt. 138-5, 221:1-15. Yet his own report and his deposition testimony show that he did not employ this methodology for the catalog PDFs, which contain a contradiction between the internal and external metadata. For these files, although OSForensics revealed both conflicting sets of metadata, Mr. Lieb reported only the external metadata, which appears to support his client's position.⁶ This error in reporting demonstrates that Mr. Lieb's methods are not reliable.

3. Mr. Lieb incorrectly translates hexadecimal code.

Mr. Lieb explained at his deposition that in addition to viewing the metadata reported by his forensics tools, he also independently confirms the metadata as represented in its original "hexadecimal code" (an interim step used by computers to translate data between the computer's

⁶ As discussed below, in Section II.C, the internal metadata of the catalog PDFs indicates that the external metadata is false and likely the product of backdating.

core binary code of 1s and 0s and human language). Lieb Dep., Dkt. 138-5, 223:21-224:1; 283:12-284:18. He typically performs that translation using software tools. *Id.*, 224:4-225:13.

Mr. Lieb includes in his report the hexadecimal code associated with the “Producer” metadata for the three CAD file PDFs that contain impossibly early “Date Created” metadata (*see* Section II.B, *infra*). Lieb Report, Dkt. 138-2, paragraphs 30, 35, and 40. In each case, the hexadecimal code identifying the “Producer” software program is an identical string of 144 characters. *Id.* But Mr. Lieb gives this same character string two different translations. In paragraphs 30 and 35, he translates that string as “Corel PDF Engine Version 17.” Only in paragraph 40 does he set forth the full translation: “Corel PDF Engine Version 17.1.0.572.”

The version number of the software that Tian Gu used to produce the CAD file PDFs is of vital importance to an assessment of the authenticity of the documents on which Paper Pop relies, as Mr. Berriman’s report makes clear. Mr. Berriman viewed the metadata through the Document Properties dialog box that is accessible to all computer users, and correctly reported the PDF Producer, in English, as Corel PDF Engine Version 17.1.0.572. Berriman Report, Dkt. 138-1, paragraph 91-94. Mr. Lieb claims to have viewed the metadata at its most basic and reliable level and then translated that information to English using an automated tool (Lieb Dep., Dkt. 138-5, 227:4-14) – yet, in two out of three places, he provides an incomplete translation. This is not a reliable methodology.

B. Mr. Lieb ignores obvious facts of the CAD file PDFs, because they are bad for Paper Pop.

Though Mr. Lieb repeatedly proclaims his independence, his errors often seem to favor his client’s position. As discussed above, he denies knowledge of basic facts regarding how documents may be easily manipulated, he reports one type of catalog metadata without

acknowledging the contradictions in the other type, and he mistranslates essential metadata that reveals which CorelDRAW version Tian Gu used to create the CAD file PDFs. But Mr. Lieb's most absurd position relates to another aspect of the CAD file PDFs: when they were created.

Unsurprisingly, the most relevant metadata for identifying when an electronic file purports to have been created is found in the file's "Date Created" field. Berriman Supp. Report, Dkt. 138-4, paragraph 124. However, when asked to identify when Paper Pop's CAD file PDFs were created, Mr. Lieb refused to adopt the dates indicated in the files' Date Created fields, as revealed by his preferred forensics tool. As explained in LovePop's Motion for Sanctions (Dkt. 113, p. 5-7), the dates reflected in the Date Created field for three of Paper Pop's CAD file PDFs are impossible, because they would mean that Tian Gu had used CorelDRAW version 17.1.0.572 before that software was released and in one case even before it existed. Rather than endorse those impossible dates, as explained below, Mr. Lieb testified that the creation dates of the CAD file PDFs should be ascertained via a different, indirect approach that yields only a range rather than an exact date.

If a preexisting computer file is embedded within a PDF, the embedded file's own metadata can be embedded within the metadata of the PDF. Lieb Dep., Dkt. 138-5, 156:18-157:4. Each CAD file PDF in this case embeds the preexisting corresponding CAD file (a document that can be opened using computer-aided design ("CAD") software, rather than a PDF viewer). When asked to determine when one of the CAD file PDFs was created, Mr. Lieb insists on looking only at the metadata associated with the embedded CAD file, which provides him with the start of a range of dates on which the PDF containing that file might have been created. For instance, if the embedded file was itself created and last modified on February 2, 2014, Mr. Lieb says that the PDF must have been created on or after that date. *See, e.g.*, Lieb Dep., Dkt.

138-5, 248:4-11. This is logical, as far as it goes, since one cannot embed a file that does not yet exist.

But, as Mr. Lieb acknowledged earlier in his deposition, PDF files have metadata “reflecting the dates the actual PDF file itself was created, accessed, and modified.” Lieb Dep., Dkt. 138-5, 205:9-12; Berriman Supp. Report, Dkt. 138-4, paragraphs 109-110. Each of the three PDFs in question has metadata reflecting that the PDF was created on the same date as the CAD file embedded within it (*e.g.*, where the creation date of the embedded CAD file logically means that the PDF must have been created on or after February 2, 2014, the metadata associated with the PDF itself says that the PDF was created on February 2, 2014). Lieb Dep., Dkt. 138-5, 279:8-19. Despite fact that the metadata of the CAD file PDFs and their respective embedded CAD files are consistent, Mr. Lieb refuses to engage with or ascribe any meaning to the specific Date Created information that pertains to the PDF itself. Lieb Dep., Dkt. 138-5, 279:1-282:3. He instead insists that a range of possible creation dates (from the creation date of the embedded file, to the date when he collected the PDF for examination) is all that is knowable for the PDF.⁷ Lieb Dep., Dkt. 138-5, 270:5-19. Mr. Lieb thus avoids endorsing the PDFs’ Dates Created, which cannot possibly be true, although the resulting lines of questioning quickly veered into the absurd:

Q: So you think [this CAD file PDF could have been created] sometime after February 2nd, 2014?

A: It could have been.

Q: Could it have been created for the first time in December 2017?

⁷ Paper Pop did not actually produce the .cdr (CorelDRAW) files that are embedded in two of the three CAD file PDFs that Mr. Lieb analyzes. Remarkably, this means that Mr. Lieb is willing to rely on the created and modified dates of an embedded file without even examining that file (Lieb Dep., Dkt. 138-5, 252:1-253:4; 254:22-255:6; 256:2-15), while refusing to acknowledge the meaning of the created and modified dates of the PDFs themselves, which he did examine. Lieb Dep., Dkt. 138-5, 257:7-258:23.

A: I have no indication of that. I would disagree with that.

Q: Based on what?

A: I would see dates related to 2017.

Q: So the metadata of the PDF is what you rely on to tell when the PDF came into existence, correct?

A: Nope.

Lieb Dep., Dkt. 138-5, 248:12-23. Mr. Lieb points to a lack of metadata showing 2017 as the creation date of the file as the reason the document could not have been created in 2017, but will not agree that the document was created on the only date for which there is metadata support.

Mr. Lieb cannot accept the Date Created of the CAD file PDFs as reliable because (even allowing that Tian Gu may have committed separate copyright infringement and obtained a bootleg copy of a prerelease beta form of the relevant software version) the purported creation date of earliest of the PDFs predates the very existence even in beta form of the software version that created it. Thus, Mr. Lieb is forced to take the tortuous position that Paper Pop's metadata, as extracted by his forensics tool, is all reliable and accurate except this one crucial piece, which is not. He does not attempt to explain why that would or could be true. Yet Mr. Lieb continues to assert that his review revealed no evidence whatever of tampering or spoliation.⁸

C. Mr. Lieb ignores obvious facts of the catalog PDFs, because they are bad for Paper Pop – forcing him to contradict himself.

As discussed above, for each of the CAD file PDFs he examined, Mr. Lieb will only identify when they were created based on the dates of the files they embed. Lieb Dep., Dkt. 138-5, 270:5-275:9. But he takes a polar opposite approach to the PDFs of the Tian Gu catalogs,

⁸ At his deposition, after staking out the position described herein, Mr. Lieb was asked where he would look, within the report provided by his OSForensics analysis tool, to determine the date on which a hypothetical file had been created. Mr. Lieb repeatedly insisted that he did not understand this simple question, and ultimately merely repeated his incantation that he found no evidence of tampering in the documents at issue in this case. Lieb Dep., Dkt. 138-5, 283:12-289:15.

refusing to assign the same meaning to the same type of metadata – because that would acknowledge that the catalog PDFs have been manipulated.

The catalog PDFs contain internal metadata indicating that they were created and last modified in December 2017. Berriman Supp. Report, Dkt. 138-4, paragraph 152. By Mr. Lieb’s own analysis at his deposition, the catalog PDFs also contain embedded files that were created in December 2017. Lieb Dep., Dkt. 138-5, 201:1-202:5. Mr. Lieb does not identify or discuss those internal metadata dates – related to the PDFs themselves or the embedded files – in his report. Instead, his report identifies only the external, file-system metadata last modified dates for the catalog PDFs, which predate December 2017 by years, as evidence that the files existed on those earlier dates. Lieb Report, Dkt. 138-2, paragraph 11.

Mr. Lieb was asked at his deposition to consider one of the catalog PDFs, which purports in its external metadata to have been last modified in 2015. The internal metadata for that catalog PDF indicates that the PDF itself was created in December 2017 and that it embeds at least one other file that was created on December 20, 2017. Although he was presented with a screenshot from OSForensics showing that a file embedded in the PDF was created in December 2017, this did nothing to shake Mr. Lieb’s confidence that the catalog PDF was last modified in 2015. Lieb Dep., Dkt. 138-5, 207:12-208:8. Mr. Lieb ignored the evidence about an embedded file notwithstanding the fact that, in the context of the CAD file PDFs, he had taken the position that the date associated with a file embedded in a PDF is the “best evidence” of when a PDF file is created (Lieb Dep., Dkt. 138-5, 275:9). If he had taken that same position with respect to the catalog PDF discussed at his deposition, he would have had to conclude that the catalog PDF could not have been last modified in 2015 because a PDF file last modified in 2015 cannot embed a file that was not created until December 20, 2017. In other words, if he had followed

the logic of his prior analysis, that would mean that the external modified date upon which Mr. Lieb relies was incorrect – and, in fact, the result of manipulation. Berriman Supp. Report, Dkt. 138-4, paragraphs 152-153.

The inconsistency of Mr. Lieb's approach to dating the CAD file PDFs and the catalog PDFs shows that he is not applying a reliable methodology. Paper Pop's position is best served with respect to the CAD file PDFs if it is not bound to the (impossible) creation date of those PDFs, so Mr. Lieb focuses on the embedded files to provide flexibility. Paper Pop's position is best served with respect to the catalog PDFs if the dates in the PDFs' external metadata are accurate, so Mr. Lieb relies on those and disregards the contrary embedded metadata. This flip-flop may be helpful for Mr. Lieb's client, but it does not meet the standard necessary for Mr. Lieb's opinions to be admitted into evidence.

Because he incorrectly and inconsistently reports metadata and ignores metadata that is problematic to his client, Mr. Lieb should not be permitted to testify about what the metadata of Paper Pop's documents says. More fundamentally, however, his testimony on this topic is simply unnecessary. Though Mr. Lieb attacks Mr. Berriman's methods of reviewing metadata, he does not identify a single piece of metadata that Mr. Berriman got wrong. In other words, he provides no rebuttal on this issue. Mr. Berriman's testimony is reliable, uncontested, and sufficient to inform the jury of what the metadata says. There is no reason whatsoever to allow a second expert to opine in a manner that is redundant when he does not claim that Mr. Berriman's opinion is incorrect. Such testimony would not help the factfinder in any way.

III. What the Metadata Means: Mr. Lieb should not be permitted to testify that the metadata in this case can “prove” the authenticity of Paper Pop’s documents.

Mr. Lieb examined documents produced by Paper Pop in this litigation, but did not review the computers where those documents originated.⁹ As such, it is impossible for him to confirm that the documents are what they purport to be, or that there has been no tampering. His report makes relatively limited statements in this respect, asserting merely that he found no evidence of tampering. But, at his deposition, Mr. Lieb went much further, arguing that his analysis would have revealed evidence of tampering if it had occurred, and that, therefore, tampering did not occur. Lieb Dep., Dkt. 138-5, 54:3-55:10. This is not a valid conclusion for any expert to draw from the type of examination conducted in this case. It simply is not based on sufficient facts or data, as required by Fed. R. Evid. 702(b), and Mr. Lieb cannot be allowed to testify to it before a jury.

Even setting aside the failings of Mr. Lieb’s analysis set forth above and the clear indicia of fraud that Mr. Lieb ignores, and accepting for the sake of argument that a competent analysis of the documents revealed “literally no evidence or any indication of tampering, spoliation of any kind whatsoever” (Lieb Dep., Dkt. 138-5, 263:20-21), Mr. Lieb grossly overstates the significance of those findings. Indeed, Mr. Lieb admitted that the type of backdating that LovePop asserts occurred in this case could be accomplished without leaving any trace of tampering in the metadata of the manipulated documents, and his purported “test” to show the opposite is irrelevant, as it failed to test the backdating process that LovePop asserts was used.

⁹ The documents he reviewed were not even collected from those computers. Mr. Lieb stresses the importance of analyzing the “most original” version of documents, which would reside on the computers where they were created. He also acknowledges that that is not what he did in this case. Lieb Dep., Dkt. 138-5, 39:25-41:25, 44:22-45:18.

A. Mr. Lieb admitted that backdated documents can contain no evidence of tampering

Mr. Lieb was presented at his deposition with documents concerning a PDF that undersigned counsel had created for demonstration purposes. This document (the “Predictions PDF”) possessed metadata indicating that it was created and last modified in 2010, but it contained text that could not have been written until much later, because it described the details of real-world events that did not occur until much later.¹⁰ The documents Mr. Lieb reviewed at his deposition (Dkt. 138-7, 8, 9) depicted the metadata of the Predictions PDF as it appears to a typical computer user and also as extracted by OSForensics. All of the metadata reflected that the document was created and last modified in 2010 – plainly an impossible circumstance. The documents Mr. Lieb reviewed also depicted, via screenshots, the process by which counsel created the Predictions PDF and its impossible metadata – namely, by creating and saving the document on a computer whose system clock was set to 2010. Dkt. 138-7; Lieb Dep., Dkt. 138-5, 128:19-134:23.

Mr. Lieb acknowledged that this process left no evidence of tampering that was revealed in the OSForensics analysis of its metadata – the same analysis that Mr. Lieb performed on Paper Pop’s PDFs in this case.

Q: So you said that when you looked at the PDFs in this case, you found no evidence of spoliation or tampering, correct?

A: Correct.

Q: And in looking at the OSForensics extraction of metadata associated with this file called Predictions, you also see no evidence of tampering or spoliation?

¹⁰ The Predictions PDF contained the following text: “In 2014, companies called LovePop and Paper Pop will be formed. Both will sell kirigami cards. In 2017, LovePop will sue Paper Pop for copyright and trademark infringement. And the Eagles will beat the Patriots in the 2018 Super Bowl.” Dkt. 138-9; Lieb Dep., Dkt. 138-5, 137:5-9.

A: Correct.

Lieb Dep., Dkt. 138-5, 135:17-24. Mr. Lieb also acknowledged that if a backdated file is embedded into a PDF, the false metadata of the embedded document will be likewise embedded in the internal metadata of the PDF. Lieb Dep., Dkt. 138-5, 185:3-19. In other words, it is perfectly possible to use a backdated system clock to produce a backdated document (alone, or embedding another backdated document), without leaving any evidence of the manipulation within the document's own metadata.¹¹

B. Mr. Lieb should not be permitted to testify that he has “disproved” Mr. Berriman’s conclusion on backdating because his opinion is based on irrelevant facts.

Mr. Berriman concluded that certain PDFs revealed evidence of tampering. Those PDF files contain metadata showing that the PDFs and the files embedded within them were created on a certain date. Specifically, Mr. Berriman found that the PDFs were created using Corel software that was not available (and in one case did not exist) when the PDFs were created. He concludes that the most likely explanation for this circumstance is that someone backdated a computer, created new design files with a backdated date, and then created a PDF that embedded those design files.

Mr. Lieb purports to have disproved Mr. Berriman’s conclusion, but he has done no such thing. It appears that Mr. Lieb contends that a backdated PDF containing an embedded file would reflect an inconsistency between the metadata of the PDF itself and the metadata within

¹¹ By contrast, Mr. Lieb agreed that evidence of the backdating process would be revealed by examination of the hard drive where the Predictions PDF was created. Lieb Dep., Dkt. 138-5, 138:7-139:9. But no such examination was performed on the computers where the documents at issue in this case were created. Id., 262:15-263:1. Most of the evidence Paper Pop produced to support its creation dates consists of documents that originated on Tian Gu computers in China. Tian Gu declined to make those computers available at LovePop’s request, and they are outside the Court’s subpoena power. LovePop does not know whether Paper Pop – an important client of Tian Gu – ever made its own request for such access.

the PDF that relates to the embedded file. This conclusion is reflected in a supplement to his original report, which Mr. Lieb produced for the first time in the middle of his deposition. In his “test,” Mr. Lieb took a photograph in 2018, backdated his computer to 2014, and embedded the photograph in a PDF. Lieb Supp. Report, Dkt. 138-3, p.6. He did not make any attempt to alter the metadata of the photograph, so of course the resulting PDF indicates that the PDF was created and modified in 2014, and embedded a photograph that was created and modified in 2018. *Id.*, p. 7; Lieb Dep., Dkt. 138-5, 244:24-245:17. On the basis of this “test,” Mr. Lieb claims to have disproven the idea that backdating can occur without leaving evidence in the resulting document, because the resulting PDF contained inconsistent metadata. Dkt. 138-3.

Mr. Lieb’s test is irrelevant. To at all match what LovePop alleges occurred in this case, Mr. Lieb would have had to take the obvious interim step – backdating the file to be embedded (in his test case, the photograph). Had he done so, the false metadata of the embedded file would have been embedded in the PDF. The result would be a PDF with consistently false metadata – reflecting false dates for both the PDF itself and the embedded file. The metadata of such a PDF would contain no evidence of fraud. Lieb Dep., Dkt. 138-5, 182:4-185:19. Mr. Berriman has established this to be true both through his own knowledge of how metadata manipulation works and through a test that mimics what he concludes occurred in this case. Berriman Supp. Report, Dkt. 138-4, paragraphs 131-135.

Because Mr. Lieb has not conducted a test relevant to this case, he cannot opine that he has “disproved” Mr. Berriman’s conclusions about how the metadata in a PDF (and a corresponding file embedded in that PDF) can be manipulated. But more than that, Mr. Lieb had to admit at his deposition that the metadata of a backdated PDF containing a backdated embedded file would reveal no obvious sign of tampering. Specifically, when asked about a file

that he had been compelled to admit was successfully backdated, Mr. Lieb acknowledged that, if that file were embedded in a PDF, the PDF would also include the embedded file's false metadata. *Id.*, 185:3-15.

Q: Would there be anything available to you in that resulting PDF that would tell you those 2010 dates were untrue?

A: Not to my knowledge.

Id., 185:16-19. In other words, Mr. Lieb acknowledges that a PDF with an embedded file can be the result of fraud, without its own metadata providing any evidence of that fraud – exactly what he purported to “disprove” in his supplemental report. Because Mr. Lieb's supplemental report is not relevant to the facts of this case, and because he has admitted that backdating is possible in the way that Mr. Berriman describes, he should not be permitted to testify that he has “disproven” anything about Mr. Berriman's conclusions.

Mr. Lieb's position that a lack of evidence of manipulation within the documents themselves proves that there was no manipulation is entirely incorrect. He has acknowledged that an examination only of the documents themselves provides insufficient data on which to base a conclusion that no tampering has occurred, and FRE 702(b) therefore prevents him from testifying to any such conclusion.

IV. Conclusion

For the reasons above, LovePop respectfully requests that Mr. Lieb not be allowed to testify regarding (1) the basic workings of metadata and how it may be manipulated, which he does not seem to fully understand and regarding which he does not rebut Mr. Berriman; (2) the metadata associated with Paper Pop's documents, which he reports unreliably and regarding which he does not rebut Mr. Berriman; or (3) his ultimate conclusion that there has been no tampering, which is based on insufficient data and an irrelevant “test.”

Dated: December 28, 2018

Respectfully submitted,

/s/ Jenevieve J. Maerker

Neil Austin (BBO #657204)

naustin@foleyhoag.com

Jenevieve J. Maerker (BBO #670266)

jmaerker@foleyhoag.com

Nicole Kinsley (BBO #682528)

nkinsley@foleyhoag.com

FOLEY HOAG LLP

155 Seaport Boulevard

Boston, MA 02210-2600

Tel: (617) 832-1000; Fax: (617) 832-7000

Natasha N. Reed (*pro hac vice*)

nreed@foleyhoag.com

FOLEY HOAG LLP

1540 Broadway, 23rd Floor

New York, New York 10036

Tel: (646) 927-5500; Fax: (646) 927-5599

Attorneys for Plaintiff

CERTIFICATE OF SERVICE

I CERTIFY that on December 28, 2018 this document filed through the Court's CM/ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF).

/s/ Jenevieve J. Maerker

Jenevieve J. Maerker, Esq.